HARMONY 1

by Barrie Nettles

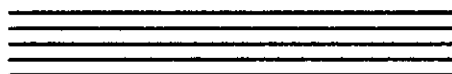
Berklee
COLLEGE OF MUSIC

HARMONY I

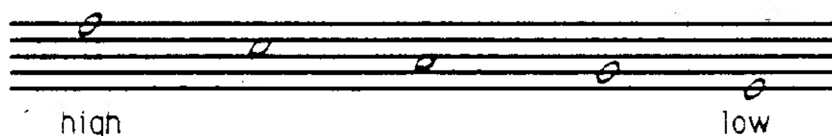
Harmony deals with the study of chords and their relationship to one another. The understanding of harmonic practice is essential to the understanding of the language of music. As in learning any language, the first step in the learning process is the development of a vocabulary.

THE STAFF

The foundation of our notation system is a grid of five lines called a **staff**.

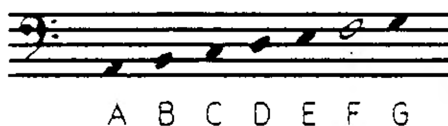


The position of notes placed on the staff visually represents relative "highness" or "lowness" of pitches.

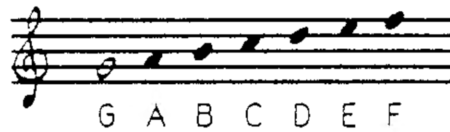


CLEFS

Each line and space of the staff may be assigned a letter name. The letter names are arranged alphabetically in ascending order: A B C D E F G. The location of the letter names is determined by a **clef** placed at the beginning of the staff. The following example uses the **F clef** (also known as the **bass clef**). The F clef locates F below "middle C" on the fourth line of the staff.



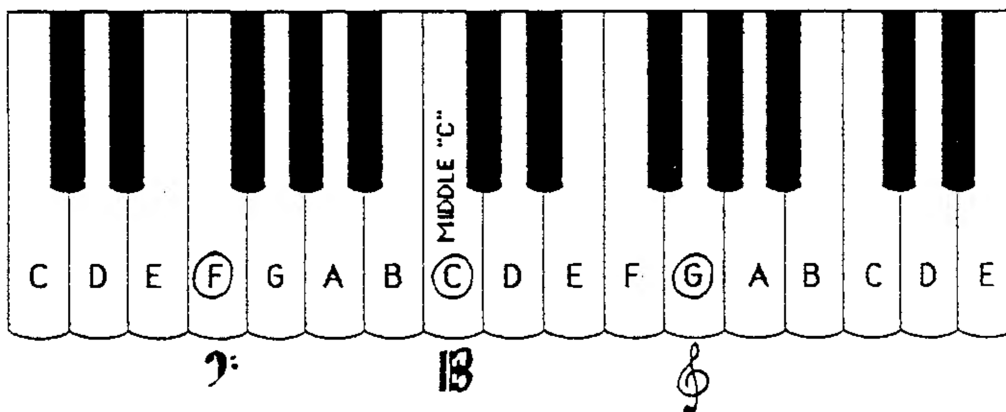
The **G clef**, also known as the **treble clef**, locates G above "middle C" on the second line of the staff.



The **C clef** locates "middle C" on the middle line (or, in some cases, on the fourth line) of the staff.

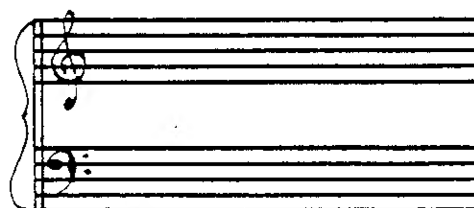


Note that the music alphabet goes from A to G, and then starts over.



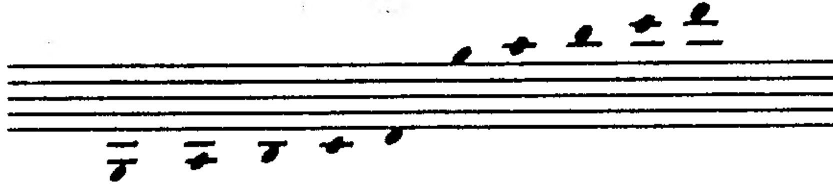
THE GRAND STAFF

When two staves and the treble and bass clef are used together, the result is called the **Grand Staff** or **Great Staff**.

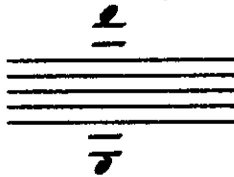


LEGER LINES

Small lines called **leger lines** are added to extend the staff.



Notice that the notes in the spaces directly below or directly above the staff do not need added leger lines.



The same applies to notes in the spaces beneath or above the leger lines.

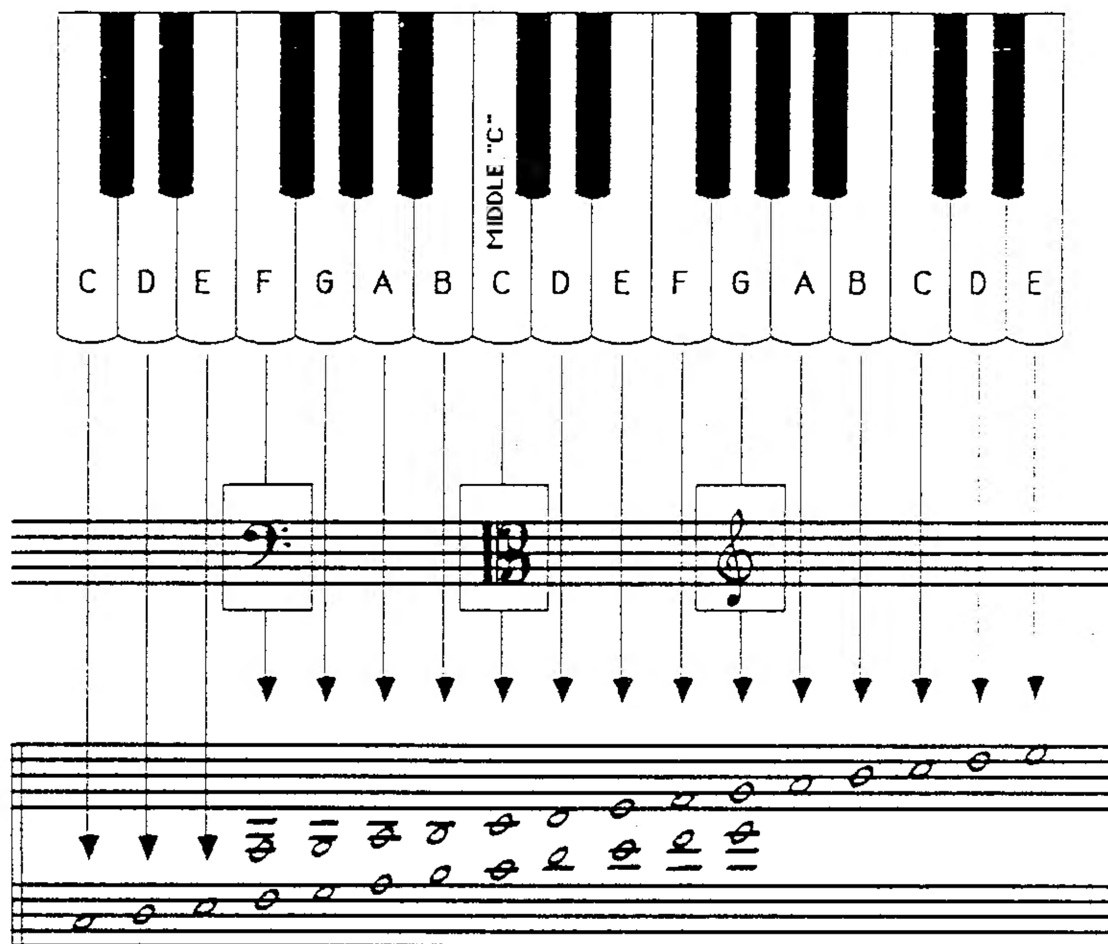
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To summarize, pitch placement devices used in music notation are:

1) the **staff**, which shows the high/low relationship between different notes.

2) the **clefs**, which locate pitch names given to lines and spaces of the staff.

3) the **leger lines**, which extend the five lines of the staff for higher or lower pitches.



Homework numbers: 1, 2, 3

ACCIDENTALS

The foregoing information about the Grand Staff covers the letter names of the white keys on the keyboard. What about the other five notes (the black keys)?

In order to maintain the integrity of the alphabet, the other five pitches are represented as alterations of the basic seven pitches. The terms used are **sharp** and **flat**. Sharp = 1/2 step higher, written as ♯ ; flat = 1/2 step lower, written as ♭ . A "C♯" is the pitch 1/2 step above C and 1/2 step below D. The sharp sign is placed before the note for reading purposes.

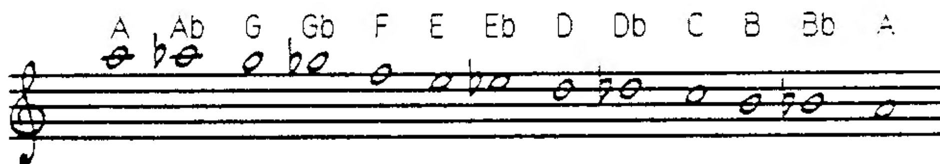


The names of the twelve notes in ascending order are:

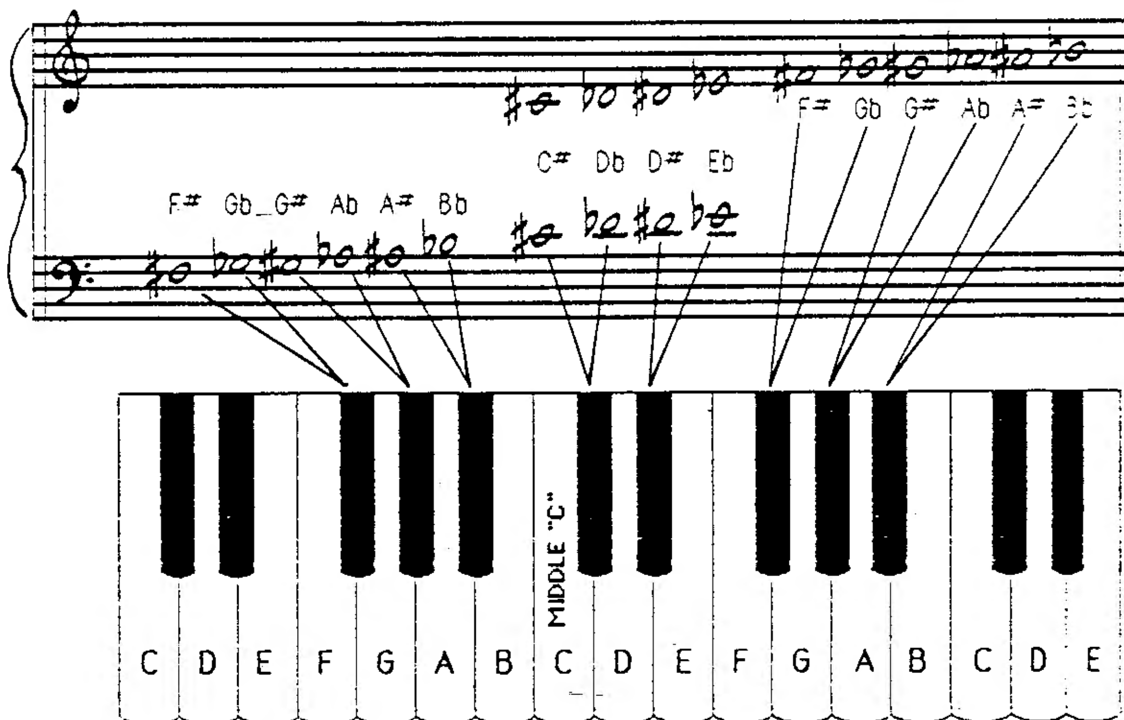


This series of notes is called the **chromatic scale**. These notes of the chromatic scale may also be examined in descending order.

As with sharps, flats are placed before the notes to which they apply.

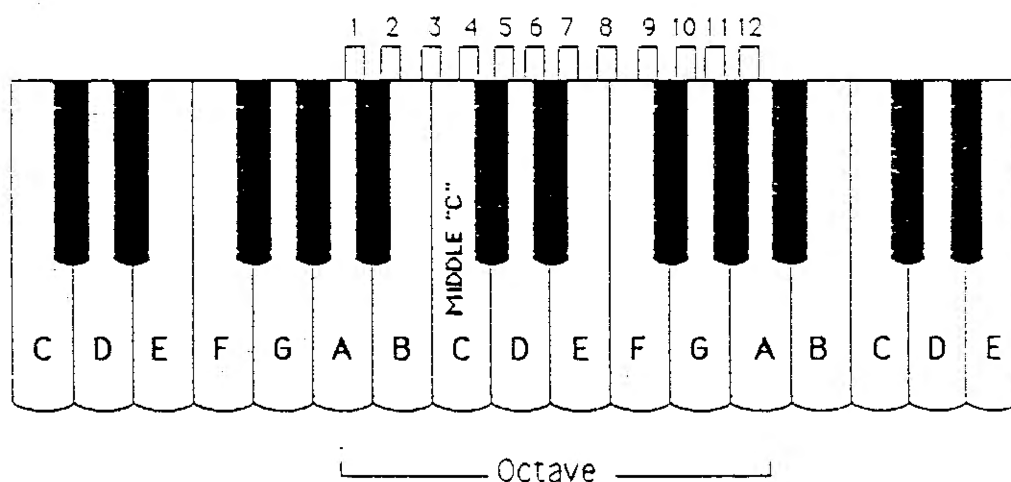


Note that there are two options for naming the five black key pitches (i.e., Db or C#, Eb or D#, etc.). When there are two (or more) possible names for the same pitch, it is said that **enharmonic spelling** is being applied.

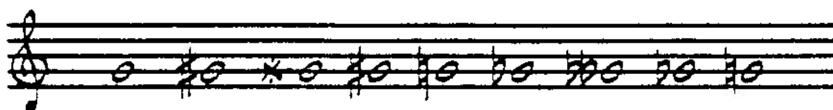


Once a sharp or a flat has occurred in a measure, there must be a means of cancelling (neutralizing) it so the note reverts to its unaltered condition. The symbol used for this is a **natural** (♮). Collectively, sharps, flats and naturals are called **accidentals**.

Within an octave (eight consecutive letter names), there are twelve half-steps:



In certain situations, it may become necessary to raise or lower a pitch by two half-steps. The symbols for these purposes are 𝄪 for a **double-sharp** and 𝄫 for a **double-flat**. These symbols are also called accidentals.

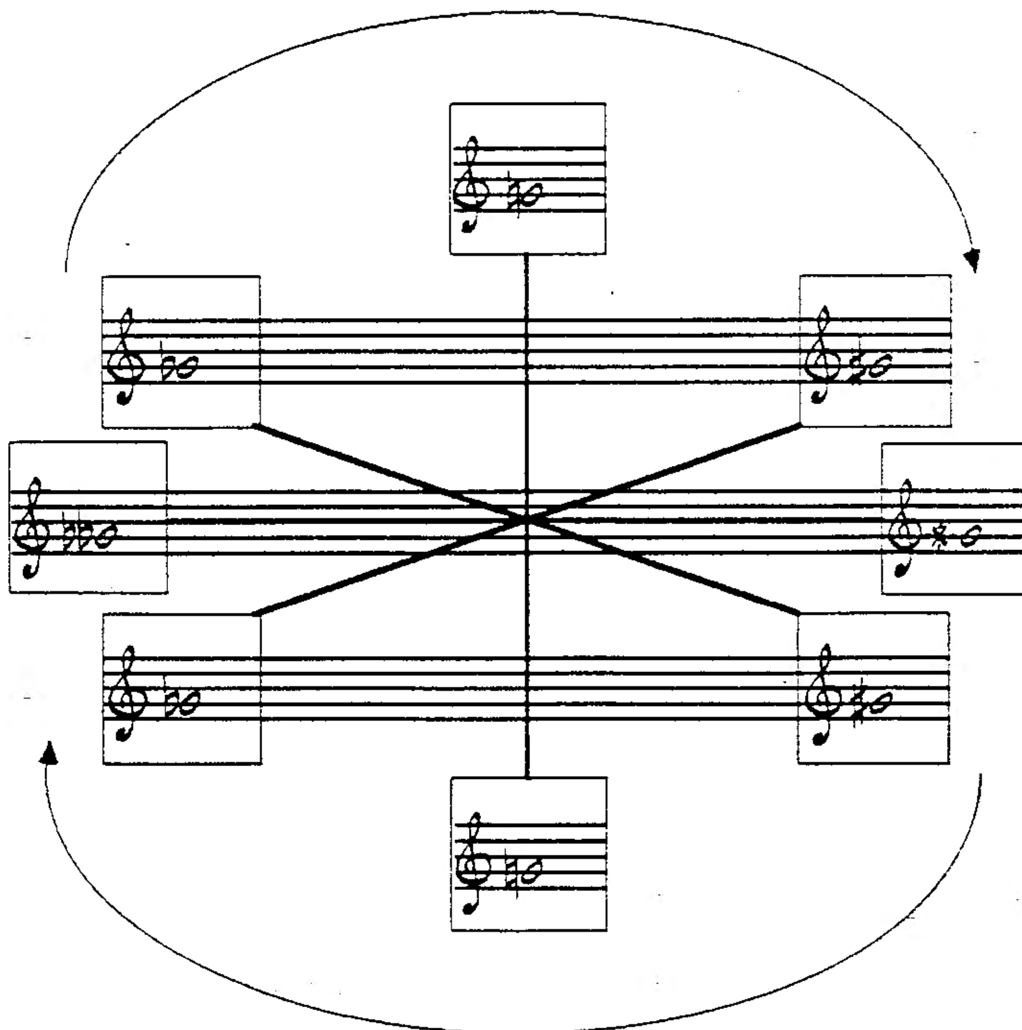


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The rules for sharps (♯), flats (♭), naturals (♮), double-sharps (𝄪), and double-flats (𝄫) are:

1. A natural cancels a sharp or flat.
2. A single sharp or flat will cancel a double-sharp or double-flat respectively.
3. One natural alone will cancel both double-sharps and double-flats.
4. An accidental remains in effect for the duration of the measure it is in, or for the duration of tied pitches, inside a measure or across the bar-line.
5. To raise a note which has already been sharped, use a double-sharp; to lower a note which has already been flatted, use a double-flat.
6. An accidental ONLY affects a specific note, in that octave, in that clef. All other notes of the same name are NOT affected.



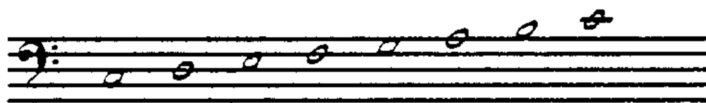
Homework numbers: 4, 5, 6, 7, 8.

A **scale** is a series of ascending or descending notes in a stepwise pattern.



This is a **chromatic scale**. It uses all the notes between the F's and all the pitches move by 1/2 step. (Chromatic implies "1/2 step.")

The following scale uses all natural notes in an octave from C to C:



This is the familiar **C major scale.**

The same notes can be used to begin and end at different points in the order of notes:

D to D

D Dorian

E to E

E Phrygian

F to F

F Lydian

G to G

G Mixolydian

A to A

A Aeolian

B to B

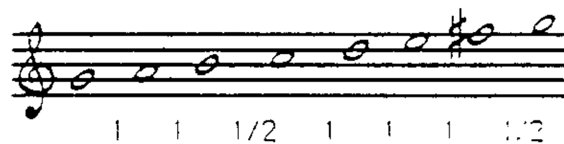
B Locrian

All of the above are scales, but they're not the same kind of scale. The characteristics of the C major scale above are the 1/2 steps from the 3rd to 4th degrees and from the 7th to the 1st degrees. The distance between the other notes is a **whole step** (two 1/2 steps) In the other scales shown above, the half-steps (from E to F and B to C) occur in different parts of each respective scale. This creates a collection of related scales known as **modes**. The modes shown above are all **relative** to the C major scale. This means that each mode starts and ends on a different note of the C major scale.

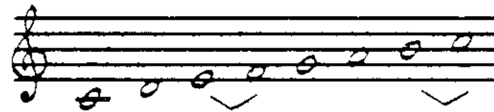
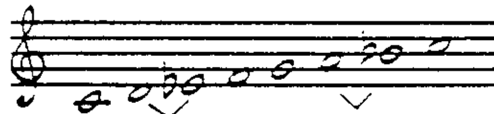
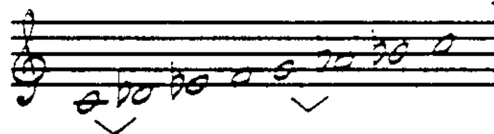
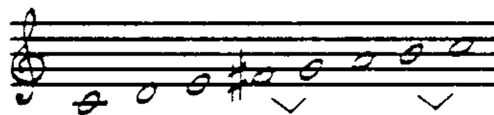
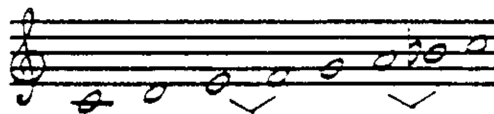
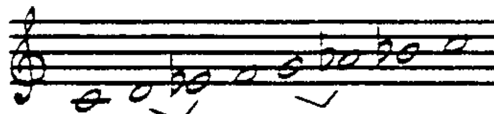
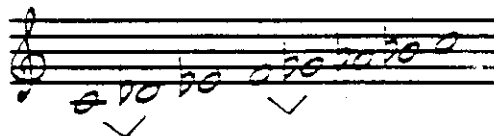
Here again is the C major scale



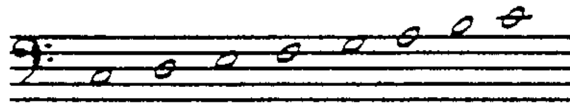
If this stepwise pattern is applied starting on G, the result is a **G major scale**.



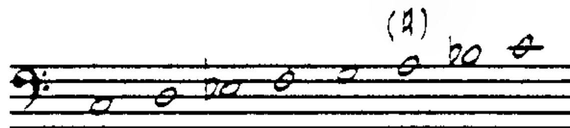
All major scales utilize the same stepwise pattern.

MODE NAME	CHARACTERISTICS	SCALE
	1/2 steps between degrees	(Parallel to "C")
Ionian (major)	3-4, 7-1	
Dorian	2-3, 6-7	
Phrygian	1-2; 5-6	
Lydian	4-5; 7-1	
Mixolydian	3-4; 6-7	
Aeolian (minor)	2-3; 5-6	
Locrian	1-2; 4-5	

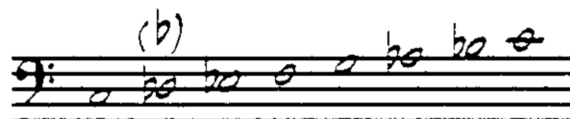
Scales may also be described by comparing them to the parallel **major** or **minor** scale.



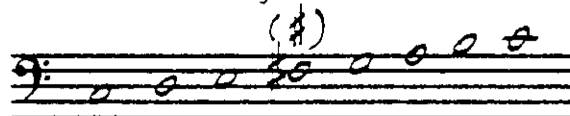
Thus, Dorian mode may be described as a minor scale with the 6th degree raised:



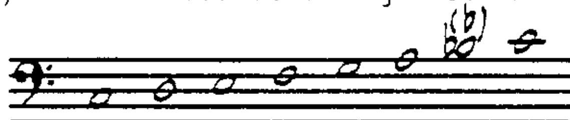
Phrygian mode may be described as a minor scale with the 2nd degree lowered:



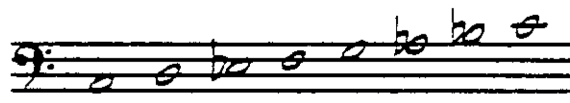
Lydian mode may be described as a major scale with the 4th degree raised:



Mixolydian mode may be described as a major scale with the 7th degree lowered:



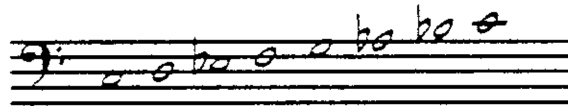
Aeolian mode (also known as the **minor scale**):



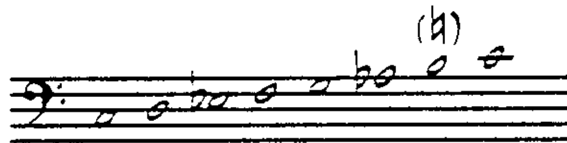
Locrian mode may be described as a minor scale with the 2nd and 5th degrees lowered:



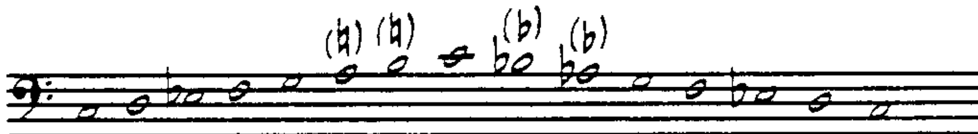
The **minor scale (Aeolian mode)** is also known as "**natural**" minor or "**pure**" minor:



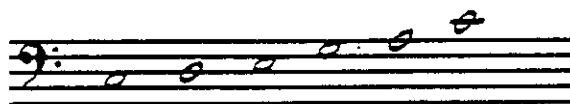
The **harmonic minor** scale may be described as a minor scale with the 7th degree raised:



The **melodic minor** scale may be described as a minor scale with the 6th and 7th degrees raised in its ascending form; in its descending form the melodic minor scale reverts to pure minor:



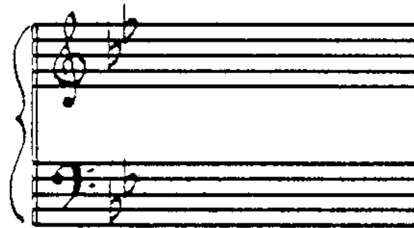
The major **pentātonic scale** is a five note scale. It contains scale degrees 1, 2, 3, 5, 6 from the major scale, and does not contain any half-steps.



Homework numbers: 9, 10

KEY SIGNATURES

Key signatures allow us to place the required accidentals of the various scales at the beginning of a piece of music. They are placed directly to the right of the clef.

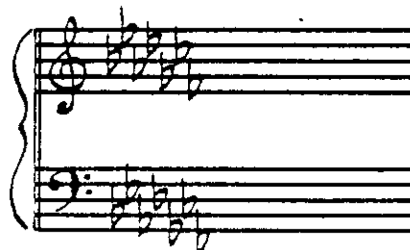


The reader, before reading the music, will look at the key signature and notice the accidentals to be used for all the affected notes. With the accidentals of the key signature at the beginning, the key is recognizable immediately even if there is a lot of subsequent chromatic alteration.



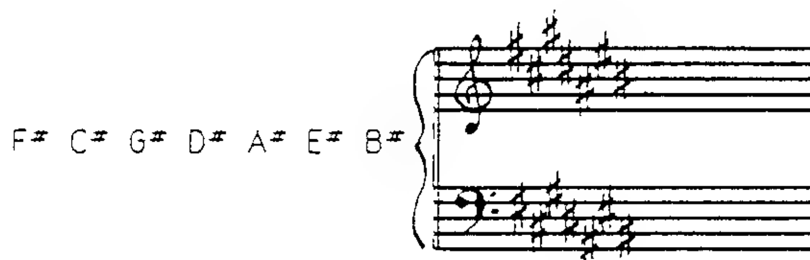
Refer to the homework for scales. The sequence of examples was not arbitrary (C, G, D, A, etc.). This sequence is the result of a phenomenon which you will see throughout the study of music. It is called the **cycle of 5ths** To be logically sequenced, the building of key signatures follows the cycle of 5ths. The placement and position of the flats in a key signature follows the cycle down in fifths:

Bb Eb Ab Db Gb Cb Fb



The key of Cb has 7 flats (all notes flatted).

The placement and position of the sharps in a key signature follows the cycle up in fifths:



The key of C# has 7 sharps, all notes are sharped.

In order to be immediately recognizable, key signatures must always be placed consistently on the staff





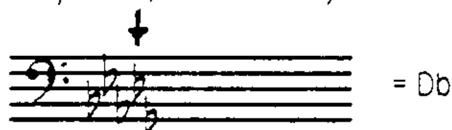
RIGHT WRONG





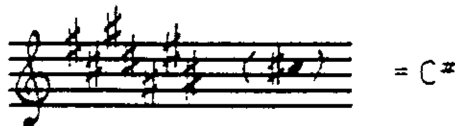
The best way to recognize any key is to know the number of sharps or flats used for it. Another way to recognize the key signature is:

1) For flat keys, the key is represented by the flat BEFORE the last flat.



= Db

2) For sharp keys, the key is a half step ABOVE the last sharp.



= C#

3) The key signature of one flat is F major The key signature of no sharps or flats is C major

Note that there is no necessity to use leger lines for the placement of any accidentals in a key signature. Unlike the general rules concerning the use of accidentals, key signatures affect all notes of the same name regardless of their octave.

Homework number: 11

INTERVALS

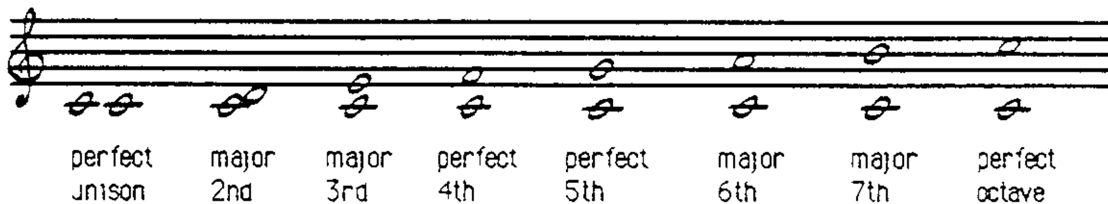
The relationship of adjacent notes in all the previous scales is a whole-step or half-step. As part of our vocabulary, we need a method to identify the relationship between any two notes.

In order to do this, we need a logical means of showing the distance, or **interval** from one note to another

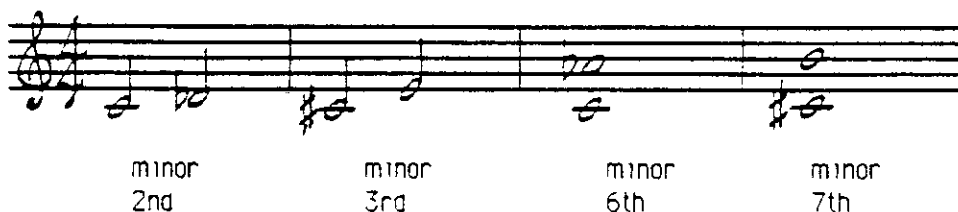
A simple numerical means of accomplishing this is to count each possible staff degree between the two notes to find which number the top pitch represents.



The intervals in a major scale between the first note and the other notes are

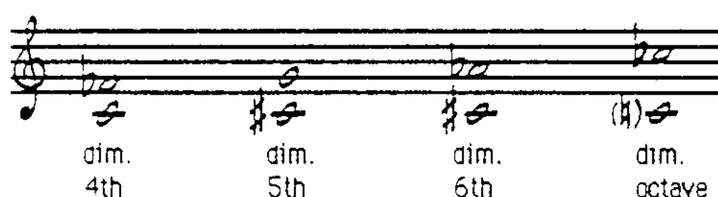


If a **major** interval is made smaller by a half-step (by lowering the top note or raising the bottom note) the major interval becomes **minor**:



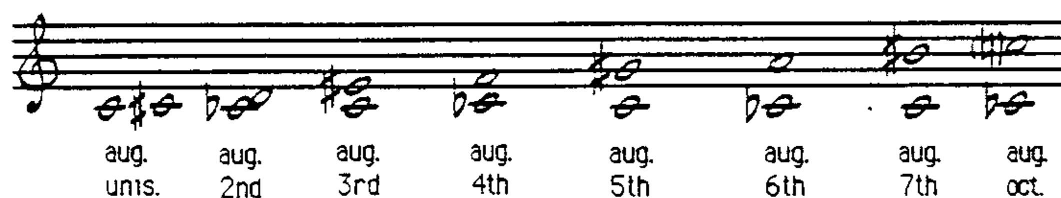
NOTE: Intervals may occur as **melodic** intervals (one note following the other), as the minor 2nd and minor 3rd in the above example, or as **harmonic** intervals (both notes together) as the minor 6th and minor 7th above

When a minor or perfect interval is made smaller by a half-step, it becomes **diminished**:

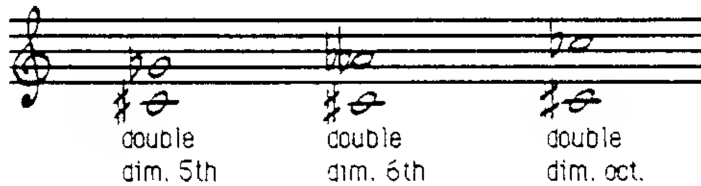


Notice that in all intervallic relationships, one must first count the number of staff degrees involved, and then qualify the relationship.

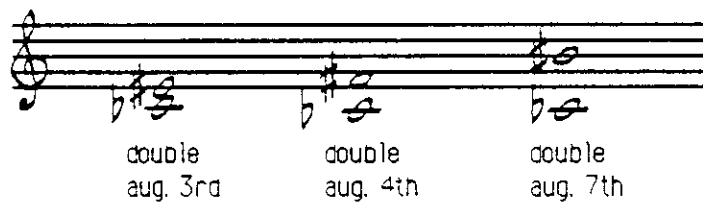
Major and perfect intervals made larger by a 1/2 step are called **augmented** intervals:



Diminished intervals made <u>smaller</u> by an additional half-step become **double diminished**:

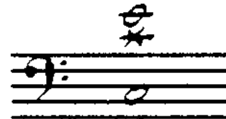


Augmented intervals made <u>larger</u> by an additional half-step become **double augmented**:



It is also possible to have an interval which exceeds the octave:

This interval is called a **major 10th** (or a major 3rd plus 1 octave).



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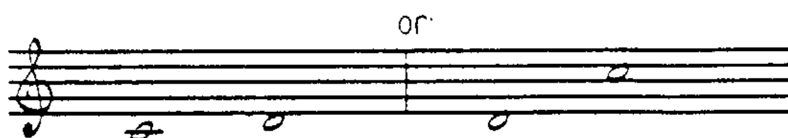
Here are the basic rules and names (when examining the distance from the first note of a major scale upwards):

1) 2nds, 3rds, 6ths and 7ths are <u>major</u> intervals.
2) Unisons, 4ths, 5ths and octaves are <u>perfect</u> intervals.
3) Major intervals made smaller by 1/2 step become <u>minor</u>
4) Major intervals made smaller by 2 half-steps become <u>diminished</u>.
5) Perfect intervals made smaller by 1/2 step become <u>diminished</u>.
6) Perfect intervals made smaller by 2 half-steps become <u>double-diminished</u>.
7) Major or perfect intervals made larger by 1/2 step are <u>augmented</u>, by two half-steps they become <u>double augmented</u>.

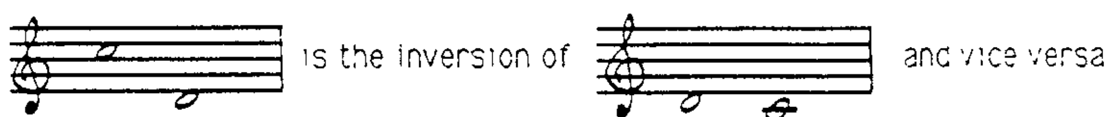
Homework numbers: 12, 13

INVERSION OF INTERVALS

Intervals describe the distance between two notes. The notes involved can appear and sound in two ways:



In other words, any interval can be turned upside-down (**inverted**)



When an interval is inverted, the note names involved are still the same, and the intervallic relationship follows a pattern. In the above example, one interval is a major 2nd; the inversion is a minor 7th. Some simple rules for inversion of intervals follow:

1) "9" minus the number of the interval equals the inversion interval:



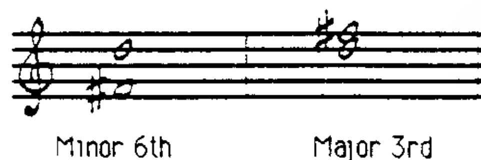
9 minus 2(nd) = 7(th) or: 9 minus 7(th) = 2(nd)

2) Major intervals inverted become minor intervals:



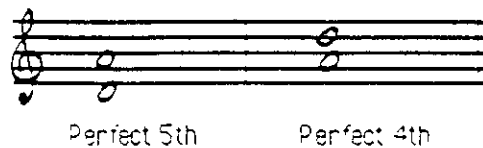
Major 3rd Minor 6th

3) Minor intervals inverted become Major:

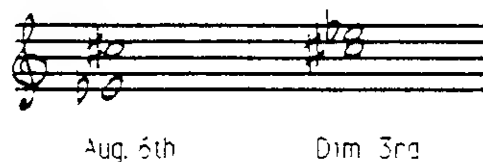


Minor 6th Major 3rd

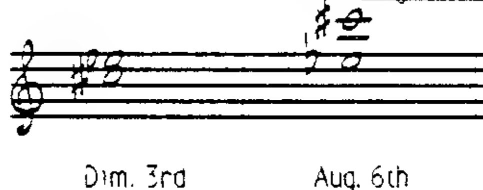
4) <u>Perfect</u> intervals inverted remain <u>perfect</u>.



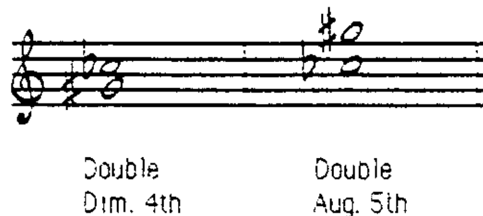
5) <u>Augmented</u> intervals inverted become <u>diminished</u>:



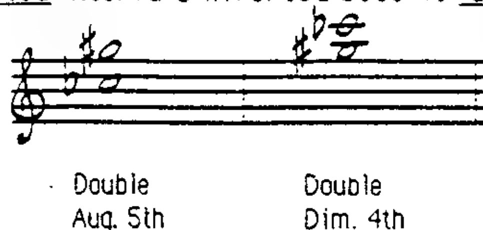
6) <u>Diminished</u> intervals inverted become <u>augmented</u>.



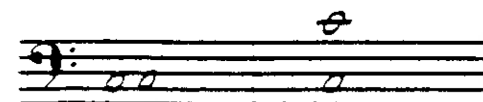
7) <u>Double diminished</u> intervals inverted become <u>double augmented</u>



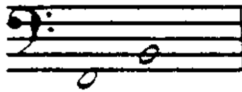
8) <u>Double augmented</u> intervals inverted become <u>double diminished</u>



In order to correctly produce an inversion of any interval, the bottom pitch must be raised one octave or the top pitch must be lowered one octave. The inversion of a perfect unison becomes a perfect octave and vice versa



The **tritone** interval (augmented 4th) is a special case. Unlike any other interval, when it is inverted, the number and qualifier change, but it remains a tritone.



is an augmented 4th (tritone - 3 whole steps)



is a diminished 5th (still tritone - 3 whole steps)

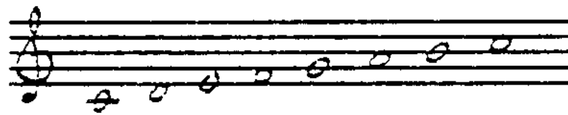
Homework number: 14.

CHORD CONSTRUCTION

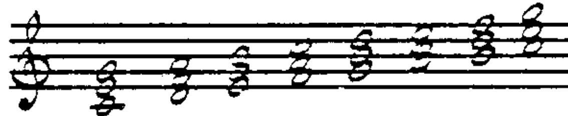
TRIADS

We have looked at notes alone in scale situations and two notes together in interval situations. Now, we will place three notes together to form a chord. The terms used to describe three note chords will be the same as before: **major**, **minor**, **augmented**, and **diminished** ("Perfect" is used only with intervals)

Three note chords are called **triads**. The basic building block for triads is the interval of a 3rd. To start with, the major scale will be used.



Above each note in the scale will be placed two more pitches - the first pitch a 3rd above the note from the scale, the second pitch a 3rd above the second pitch:



All the pitches used to build the chords are from the key of C major. They are **diatonic** to C major.

The **diatonic triads** in the key of C major contain three of the four possible triadic chord structures (major, minor, and diminished). If the intervallic relationships within each chord are studied, these three chord types and their characteristics can be seen:

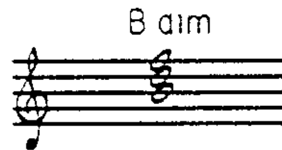
1) Major triads: chords with intervals of a major 3rd from the **root** (bottom note) to the middle note, and a perfect 5th from the root to the top note



2) MINOR TRIADS: chords with intervals of a minor 3rd and perfect 5th from the root respectively:

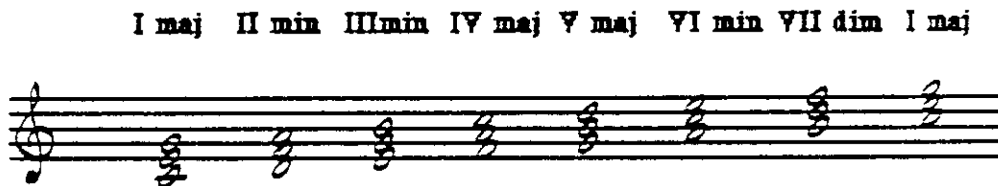


3) DIMINISHED TRIAD: a chord with an interval of a minor 3rd and diminished 5th, respectively:



Note that in all cases, the letter name of the triad signifies the bottom note. This note is called the **root** of the chord.

In addition, each chord will be identified with a Roman numeral representing the scale degree of the bottom pitch:



Here are some universally accepted abbreviations used for triads:

C = C major triad. Optionally "major" or its abbreviation "maj" may appear: i.e., C major or C maj.

"min" is the abbreviation for minor. Also used, though not universally, is the minus sign " – " (which will remain the choice for this course). "A minor" will be notated in this course "A–."

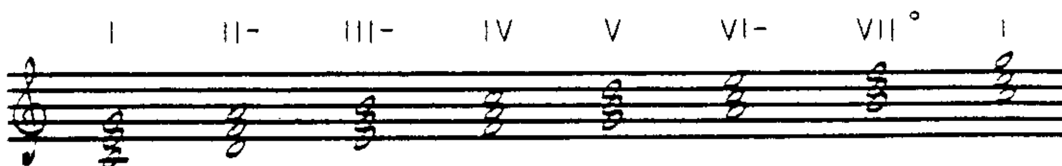
Diminished is represented best by "dim" or a small circle above the triad name, i.e.; B dim or B°

The diatonic triads are:

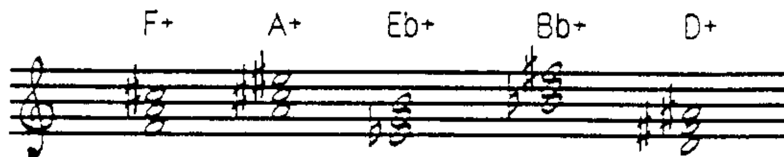
I maj II min III min IV maj V maj VI min VII dim I maj

OR:

I II– III– IV V VI– VII° I

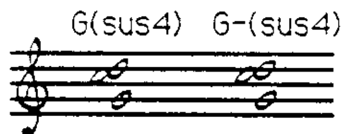


The fourth type of triad, besides major, minor and diminished, is the **augmented** triad. It is abbreviated either "aug" or " + ." The augmented triad has a major 3rd and an augmented 5th from the root:



The augmented triad is not diatonic to any major key. Its usage will be discussed later.

There is one more type of chord. It is a very common chord in contemporary music, and it doesen't fit the normal pattern of stacked thirds. It is the "**suspended 4th**" chord. The chord symbol used is **sus4**. A suspended fourth chord (sus4) is a triad in which the 4th degree replaces the 3rd degree:



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To summarize;

Major triads are constructed with major 3rds and perfect 5ths from the root:



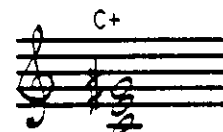
Minor triads are constructed with minor 3rds and perfect 5ths from the root:



Diminished triads are constructed with minor 3rds and diminished 5ths from the root:



Augmented triads are constructed with major 3rds and augmented 5ths from the root:



Homework number: 15.

CHORD CONSTRUCTION (CONT'D)

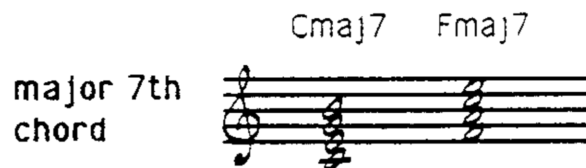
SEVENTH CHORDS

The logical extension of a diatonic triad is the addition of another diatonic third above the fifth of the triad.



The result is a diatonic **seventh chord** which contains a diatonic 7th degree above the root. In triads there are only three intervallic relationships: root to 3rd, root to 5th and 3rd to 5th. With the added pitch of 7th chords, the complexity doubles: root to 3rd, 5th, 7th; 3rd to 5th, 7th, 5th to 7th. Thus, 7th chords are more complex than triads.

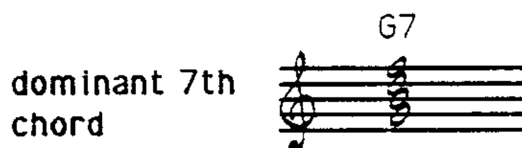
Chords with a major 3rd, perfect 5th and major 7th from the root define a:



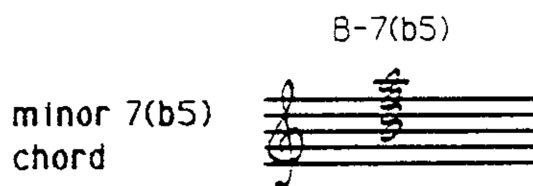
Chords with a minor 3rd, perfect 5th and minor 7th from the root define a:



A chord with a major 3rd, perfect 5th and minor 7th from the root defines a:

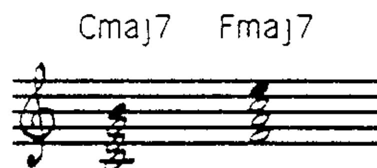


A chord with a minor 3rd, diminished 5th and minor 7th from the root defines a:

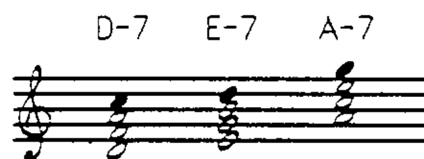


It helps to compare these seventh chords with the triads on which they are built:

The chords built on C and F are major triads with major 7ths:



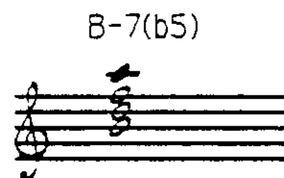
The chords built on D, E and A are minor triads with minor 7ths:



The chord built on G is a major triad with a minor 7th:



The chord built on B is a diminished triad with a minor 7th:



The chord symbols for seventh chords which will be used in this course are:

maj 7 = major triad w/major 7th
7 = major triad w/minor 7th
-7 = minor triad w/minor 7th
-7(b5) = dim. triad w/minor 7th

The diatonic triads in C major are:

I maj7	II-7	III-7	IV maj7	V7	VI-7	VII-7(b5)
C maj7	D-7	E-7	F maj7	G7	A-7	B-7(b5)



There are other 7th chord structures which are not diatonic to a major key:

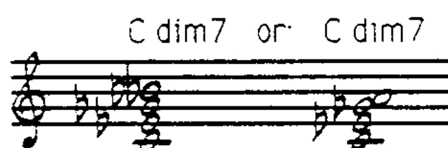
The +7 (**augmented 7th** chord) which consists of an augmented triad with a minor 7th:



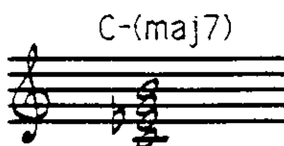
The °7 (**diminished 7th** chord) which consists of a diminished triad with a diminished 7th:



Note: in the diminished 7th chord, the diminished seventh interval is sometimes written enharmonically.



The **minor/major 7th** chord [symbol: -(maj7)] which consists of a minor triad with a major 7th:

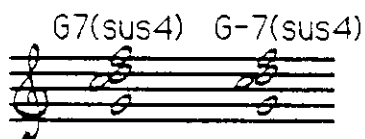


Notice in the chord symbol, the "-" represents the basic chord sound (minor) while the "(maj7th)" indicates the 7th quality. The parenthesis is necessary to keep minor and major from being confused.

The **major 6th** chord and the **-6** (minor 6th) chord which consist of a major or minor triad respectively and an "added" 6th degree:



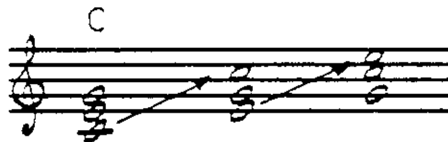
The dominant 7(sus4) chord which consists of a suspended 4th triad with a minor 7th:



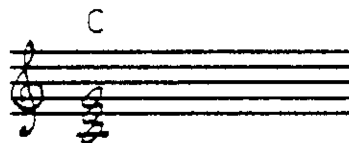
Homework number: 16.

INVERSION OF CHORDS

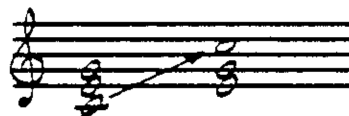
The basic rule for inverting triads is the same as that for intervals: bring the bottom pitch up an octave. There are as many positions of inversion for a triad as there are notes in the chord (i.e. three in a triad).



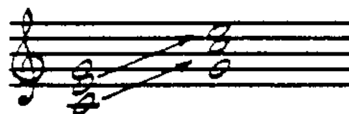
If the root is positioned on the bottom (where it would normally be for naming purposes) the chord is in **root position**:



The **first inversion** is accomplished by bringing the root up an octave:



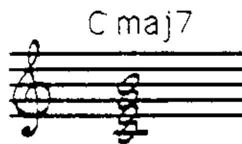
The **second inversion** is accomplished by bringing the root and the 3rd up an octave:



One more inversion would bring the chord back to root position. Notice that there are three possible choices for the top note of any triad.

Since seventh chords contain four notes, there are four positions of inversion possible:

1. **Root position**:



2. **1st inversion** with the root on top and the 3rd on the bottom



3. **2nd inversion** with the root and 3rd brought to the top and the 5th on the bottom:



4. **3rd inversion** with the root, 3rd and 5th brought to the top and the 7th on the bottom:



Homework numbers: 17, 18, 19, 20.

TENSIONS

Consideration is now given to further extensions of the 7th chord:



Chords larger than 7ths exceed an octave and create intervallic relationships which are much more tense than the simple octave-or-less intervals of triads and 7ths.

No matter what the inversion is, all the intervals in a triad or 7th chord are less than an octave in size.



Extend a 7th chord in 3rds as far as possible without repeating pitches:



There are now 21 intervals in this chord! A 7th chord in root position has 6, a triad 3. The number of intervals has more that tripled from those of the 7th chord, while the 7th chord has only twice as many as the triad. In addition to the intervals which are less than one octave, there are now **compound intervals** (the 9, 11th and 13th). Some facts about these extended 7ths chords should be recognized:

1 The added pitches are not chord tones of the 7th chords,

2. They create tense intervallic relationships with the chord tones.

Because of this tense relationship with the chord tones of the 7th chord, these extensions are called **tensions**. 1, 3, 5 and 7 are the **chord tones**; 9, 11 and 13 form the basis for the chord's <u>possible</u> tensions. Here is a C maj7 chord with its <u>possible</u> tensions:

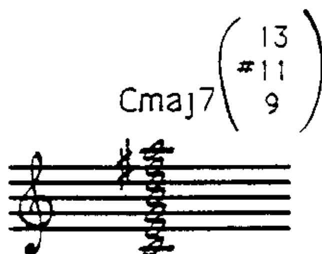


The 9th (D) is a major 9th above the root; the 11th (F) is a minor 9th above the 3rd; the 13th (A) is a major 9th above the 5th. The tensions which sound best will be those a <u>major 9th</u> above a chord tone. (A minor 9th interval is extremely harsh sounding.) In the following examples all tensions are those a major 9th above the chord tones:



Note that the "F" has been sharped in order to create the major 9th interval.

The 13th (A) is a major 9th above the 5th; ♯11 (F♯) is a major 9th above the 3rd; 9 (D) is a major 9th above the root. Notice that tension ♯11 is not identified as "augmented 11." Tensions are labeled as follows:



The chart of available tensions for all chord changes is on the following page. Most of the available tensions are those which are a major 9th above a chord tone. Any available tensions that are not a major 9th above a chord tone are listed separately as exceptions.

Maj7 is included in the list as a special tension situation available on certain chord structures.

AVAILABLE TENSIONS

CHORD	AVAILABLE TENSIONS	AVAILABLE TENSIONS WHEN DIATONIC TO KEY	EXCEPTIONS TO THE "MAJ 9TH ABOVE A CHORD" TONE RULE
maj (triad)	9		
min (triad)		9	
aug (triad)	9, #11 (or b5)		
dim (triad)	All available tensions must be a maj 9th above each chord tone and diatonic to the key.		
sus4 (triad)	11 (as chord tone)	9	
maj 6	maj7, 9	#11	
min 6	maj7, 9, 11		
maj 7	maj7 (as chord tone) 9, 13	#11	
min (maj 7)	maj7 (as chord tone) 9, 11, 13		
min 7	11	9	13 not available except in Dorian mode context
min 7(b5)	11, b13	9	
dom 7		9, #11, 13	b9, #9, b5(see note 1), b13
dom 7 (sus4)	9, 11(as chord tone), 13		very rarely: b9, #9, b13
aug 7	9, #11 (or b5)		
dim 7	All available tensions must be a maj 9th above each chord tone and diatonic to the key.		

Note 1 - b5 is a special tension situation involving an alteration of the 5th.

Note 2 - The available tensions on dim 7th chords are not numbered 9, 11, 13, etc. Unlike other 7th chords, a major or minor 9th above each chord tone results in four possible tensions, not three. The numbering system to 13 will not work here. Specific available tensions for dim 7ths will be shown when the chords are shown in context.

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Summary of Available Tensions

Tension:	Available on:
maj 7	maj7, -(maj7); maj6; -6
9	All chords (when diatonic to the key)
b9 and/or #9	dom7; rarely, dom7(sus4)
11	all forms of minor chords; as a chord tone on dom7(sus4)
#11	maj7 and maj6 when diatonic to key; dom7, -7
b13	-7(b5); dom7
13	maj7; -(maj7); dom 7; dom7(sus4)

Chord symbols used to show tensions fall into two categories:

1) The listing of tensions which are not diatonic;

2) The optional "courtesy" listing of tensions which <u>are</u> diatonic.

Tensions which would not normally be available <u>MUST</u> be included in the chord symbol:

C maj7(#11)



C maj7 in C major implies only 9 and 13 availability. C maj7(#11) would indicate use of a non-diatonic tension.

Homework numbers. 21, 22.

DIATONIC HARMONY

Any diatonic chord may progress to any other diatonic chord. The control factor is the relationship between the roots of the chords. This is called **root motion** and falls into three categories:

1) The strongest diatonic root motion is movement **down in 5ths** (the cycle of 5ths).

maj7 IVmaj7 VII-7(b5) III-7 VI-7 II-7 V7
Gmaj7 Cmaj7 F#-7(b5) B-7 E-7 A-7 D7

The tensions available are determined by the function of the chord in the key, the tensions that are diatonic to the key and the tensions that are a major 9th above a chord tone.

Imaj7 IVmaj7 VII-7(b5) III-7 VI-7 II-7 V7

TENSIONS: (13 9) (13 #11 9) (b13 11) (11) (11 9) (11 9) (13 9)

V7 to I is the strongest diatonic root motion in the key, therefore it receives a special analysis symbol.

V7 → I

The arrow will always be used to show dominant resolution down a perfect fifth.

2) Root motion down a diatonic 4th is also strong although not as strong as root motion down a diatonic 5th.

G V7 D7 II-7 A-7 VI- E- III- B- VII-7(b5) F#-7(b5) IV C

TENSIONS (9) (13 9) (11 9) (9) (b13 11) (9)

3) Stepwise root motion is a little more subtle than root motion of 4ths and 5ths.

I II- III- IV III- II- I IV V(sus4) VI- V7
G A- B- C B- A- G C D7(sus4) E- D7

4) The other diatonic root motion is down or up in thirds. Movement down is more common than movement up.

VI- IV II- I III- II- IV VI- V(sus4)
G E- C A- G B- A- C E- D(sus4)

In reviewing all of the previous examples, take note that they are repeated. If an ending point is sought, the best final chord will be the I chord. **The I chord may be followed by any other chord because it represents a point of harmonic arrival**

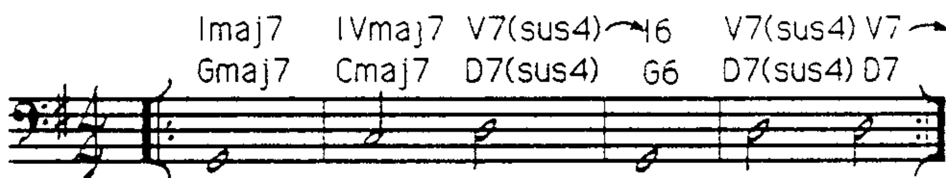
V7 (SUS 4) CHORDS

The V7(sus4) chord is usually built on the dominant degree of the key:

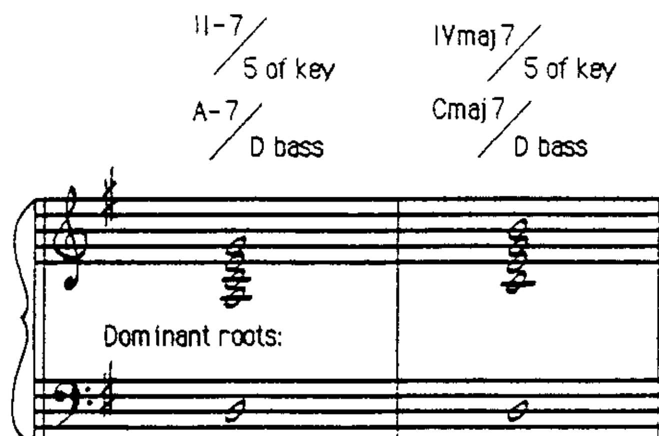


The strength of dominant resolution lies in the root motion of a perfect 5th down.

Since the V7(sus4) does not contain a tritone, its diatonic function is dependent on context:



Another observation concerning the V7(sus4) chord can be seen if the structure is categorized as having a subdominant upper structure (since the tritone is not present). The chords sound subdominant but the root is dominant.



The above two chords each contain a subdominant sounding upper structure and the dominant degree of the key as their root.

These chords are common in contemporary tunes:

II-7/5 of key | I | IV | IVmaj7/5 of key | I
A-7/D bass | G(add9) | C | Cmaj7/D bass | G(add9)

II-7 over 5 of the key and IVmaj7 over 5 of the key are both subtle versions of V7(sus4) and should be analyzed as such:

V7(sus4) → I | IV | V7(sus4) → I
A-7/D bass | G(add9) | C | Cmaj7/D bass | G(add9)

The II- (II-7) over 5 of the key and the IV (IVmaj7) over 5 of the key can be seen as chord structures derived from the extended structure of the V7(sus4):

A-/D | A-7/D | C/D | Cmaj7/D | D7(sus4),11,13

DIATONIC REHARMONIZATION

Diatonic chords have names based of the location of their roots within the scale. The I chord is called **tonic**, the V chord is **dominant**, the IV chord is called **subdominant**

All diatonic chords can be categorized as sounding in one of the three categories:

Tonic:

I (triad)
Imaj7

III-
III-7

VI-
VI-7

Subdominant:

II-
II-7

IV (triad)
IVmaj7

Dominant:

V (triad)
V7

VIIdim
VII-7(b5)

T SD SD/D T SD/D D
I IV6 V7(sus4) I V7(sus4) V7
G C6 D7(sus4) G D7(sus4) D7

T =TONIC SD =SUBDOMINANT D = DOMINANT SD/D = Dominant root with subdominant upper structure

By substituting other chords from the same functional sound category it is possible to **reharmonize** the above example. The end result will be a new chord progression which sounds similar to the original.

T T SD D T T SD SD/D
III-7 VI-7 II-7 V7/I VI-7 I6 IV6 V7(sus4)/I
B-7 E-7 A-7 D7 E-7 G6 C6 D7(sus4)

In comparing these two progressions, some important facts must be considered:

1) the root motions are not the same, though the melodies are;
2) the melody and reharmonization choices must be compatable;
3) the original resolutions of the two dominant chords are no longer down a perfect fifth (the normal expected resolution for V7 or V7(sus4) is down a perfect fifth to the I chord).

V7 → I V7(sus4) → I V7/I VI-7 V7(sus4)/I III-7

D7 G D7(sus4) G D7 E-7 D7(sus4) B-7

Notice that the analysis symbols for the "deceptive" resolutions of V7 to III-7 or VI-7 are different from those for the resolution of V7 to I. The root motion is not down a perfect fifth, so there is no arrow. The analysis symbol is: V7/I. V7/I means V7 of I; V7 is expected to progress to I, but resolves deceptively (**deceptive resolution**) to another tonic chord.

CADENCE

The term **cadence** means melodic and/or harmonic movement to a point of rest. That point of rest is the cadence.

Dominant cadence:

T D T D T D T
B: I G: V7 → I Eb: V7 → I B: V7 → I
Bmaj7 D7 Gmaj7 Bb7 Ebmaj7 F#7 Bmaj7

Subdominant cadence:

T SD T T SD T T SD T T SD T
F: I IV I Bb: I IV I C: I IV I F: I IV I
F Bb F Bb Eb Bb C F C F Bb F

A subdominant to dominant to tonic progression is considered a <u>full</u> cadence since all the functional sound groups of the key are represented: **IV to V to I** is the traditional **full cadence.**

SD D T
IV V → I
C D G

Other cadential variations are possible:

IV to V(sus4) to I is subtle since there is no tritone involved:

IV V(sus4) → I
C D(sus4) G

IV to IV/dominant root to I is even more subtle because the motion from the subdominant to dominant only involves root motion from IV to V of the key

IV V7(sus4) I
C C/D G

The **II−7** to **V7** to **I cadence** is very strong since all the root motion is down in perfect 5ths. This particular variation of the full cadence is so strong that some styles of contemporary music rely on it almost exclusively:

G: II−7 V7 → Imaj7 F: II−7 V7 → Imaj7
A−7 D7 Gmaj7 G−7 C7 Fmaj7

Bb: II−7 V7 → Imaj7 G: II−7 V7 → Imaj7
C−7 F7 Bbmaj7 A−7 D7 Gmaj7

NAME______________________________ HARMONY I HOMEWORK #[illegible]

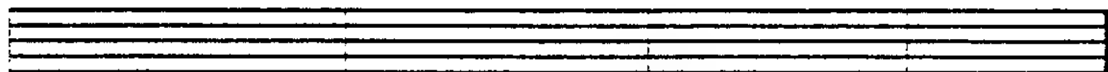
HOMEWORK

1) Identify, by pitch name, all the following pitches

NOTES:



2) Notate the melody in ex 1, above, in the bass clef. Use leger lines when necessary. Both examples should sound exactly the same on the piano.



3) Identify, by pitch name, all the following notes in **two** of the **C clefs**.

NOTE

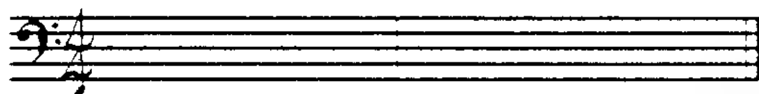


NAME________________________ HARMONY HOMEWORK 49

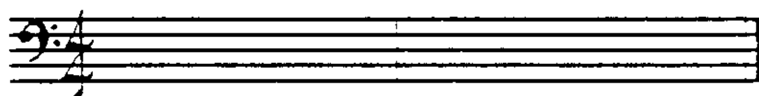
4) Write this short melody:



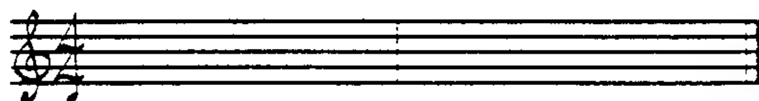
1. One octave BELOW:



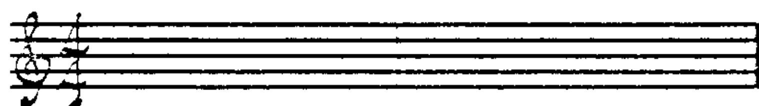
2. Two octaves BELOW:



3. One octave ABOVE:



4. Two octaves ABOVE:

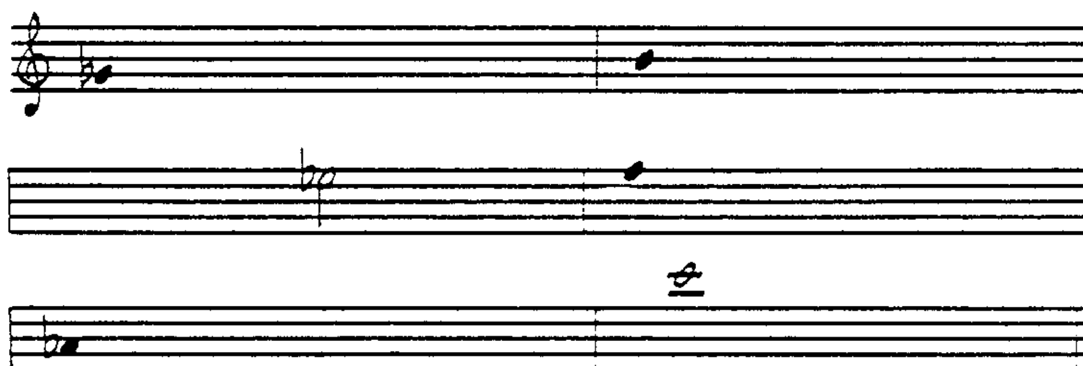


NAME________________________ HARMONY I HOMEWORK 50

5) Notate chromatic motion between the given pitches. Observe the rules governing accidentals.



6) Rewrite the previous example 1/2 STEP HIGHER.



NAME________________________________ HARMONY HOMEWORK 5

7) Identify by name all the pitches. Then, place the number for all notes of the chord on the appropriate key of the keyboard below. The first example is completed.

C#
F
A

1 2 3 4 5 6 7 8 9 10

MIDDLE "C"

1 1 1 1

NAME____________________________________ HARMONY HOMEWORK 52

8) Complete the following **enharmonic pitch** chart.

Natural Notation:	Sharp Notation:	Flat Notation:	Double-sharp Notation:	Double-flat Notation:
NONE				NONE

9) Complete the following chart of major and minor scales. Indicate the 1/2 steps. Do not use enharmonic spelling. Do not mix sharps with flats.

Number of sharps or flats necessary for related major and minor:

MAJOR SCALE.

RELATED NATURAL MINOR

None

C major

A minor

1 ♯

B minor

A major

NAME________________________ HARMONY HOMEWORK 54

MAJOR SCALE RELATED NATURAL MINOR

Number of sharps or flats.

A# minor

NAME________________________________ HARMONY I HOMEWORK 55

MAJOR SCALE: RELATED NATURAL MINOR:

Number of sharps or flats:

______

______ Ab major

______

______ G minor

______ F major

NAME________________________________

10) Identify the following MODES:

F Dorian

NAME________________________________

11) Write the key signatures for the following keys and identify the missing tonality:

G major	__ major	D major	Bb major
__ minor	D minor	__ minor	__ minor

__ major	Eb major	__ major	__ major
F# minor	__ minor	C# minor	F minor

__ major	C major	__ major	Cb major
A minor	__ minor	A# minor	__ minor

__ major	Gb major	__ major	__ major
D# minor	__ minor	G# minor	Bb minor

NAME____

12) Complete the following chart of intervals from the key of Eb. Keep the highest pitch diatonic. Use the appropriate accidentals.

Diatonic interval:	Diatonic interval reduced by 1/2 step:	Diatonic interval increased by 1/2 step:
min 2nd	dim 2nd	maj 2nd

NAME ____________________

HARMONY HOMEWORK 50

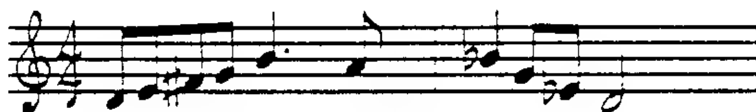
Diatonic interval:	Diatonic interval reduced by 1/2 step:	Diatonic interval increased by 1/2 step:

NAME______________________________

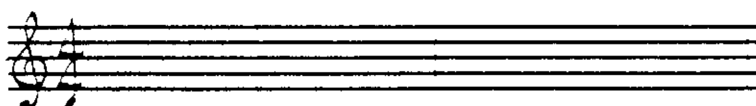
Diatonic interval:	Diatonic interval reduced by 1/2 step:	Diatonic interval increased by 1/2 step:

NAME________________________________

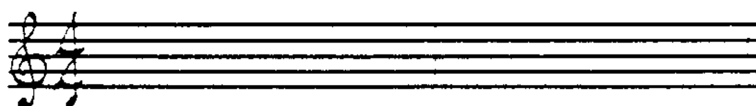
13) Rewrite this melody



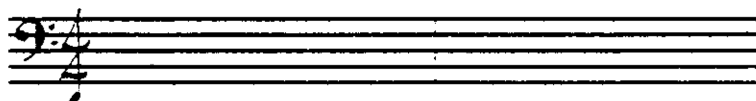
1) A major 2nd higher



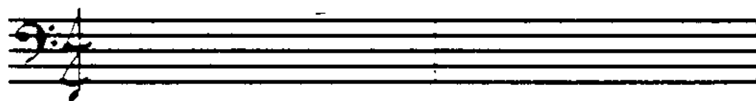
2) A major 6th higher:



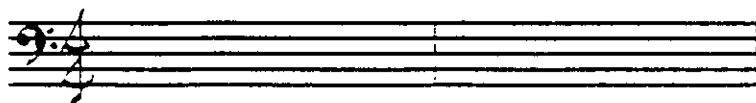
3) A major 9th lower (in bass clef):



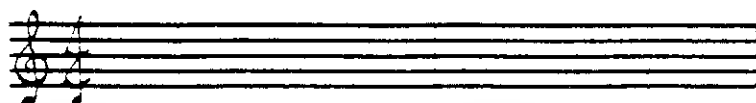
4) A major 13th lower:



5) A minor 3rd lower:



6) A perfect 4th higher:



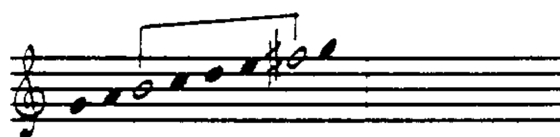
NAME________________________________

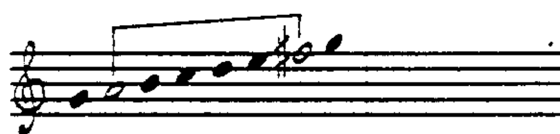
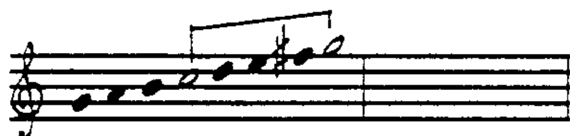
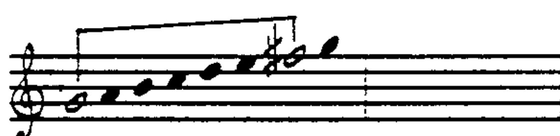
14) Complete the following chart of intervals and their inversions diatonic to the key of G. Label the intervals:

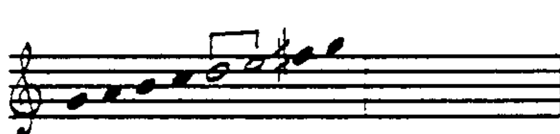
Diatonic Interval:	Inversion of diatonic interval:	Diatonic Interval:	Inversion of diatonic interval.

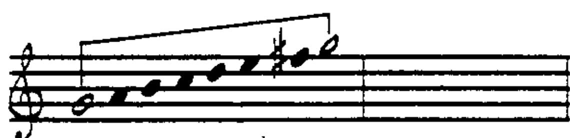
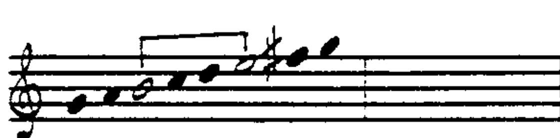
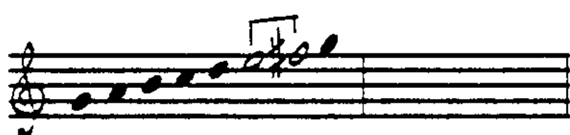
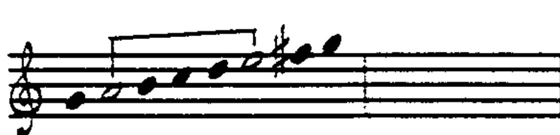
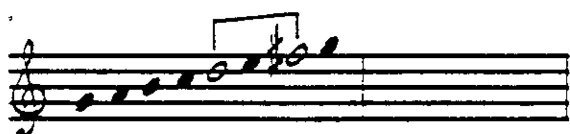
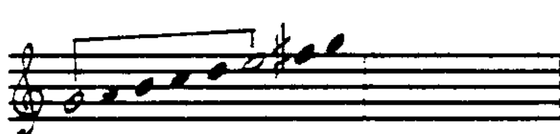








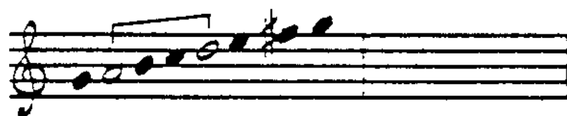
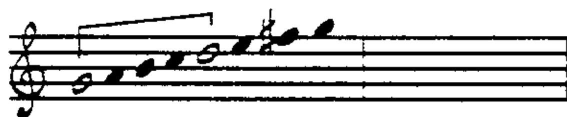
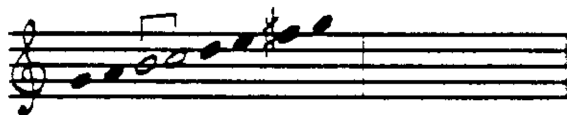
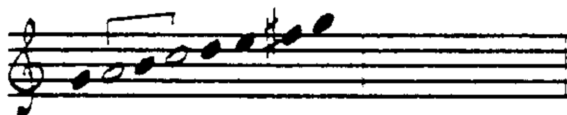








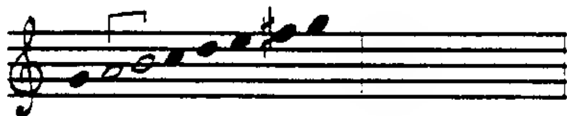
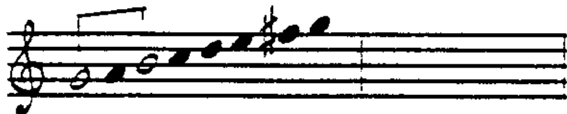
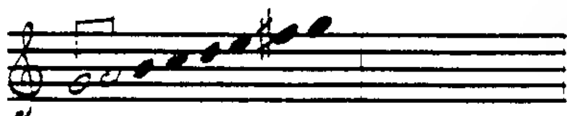
NAME________________________________ HARMONY HOMEWORK 64

(Ex. 14 continued:)

Diatonic interval: | Inversion of diatonic interval:



NAME________________________________ HARMONY I HOMEWORK #5

(5) Construct the indicated TRIADS in ROOT POSITION. Do not use enharmonic spelling.

C C- C aug C dim C(sus4) F F- F aug F dim F(sus4)

Bb Bb- Bb aug Bb dim Bb(sus4) Eb Eb- Eb aug Eb dim Eb(sus4)

Ab Ab- Ab aug Ab dim Ab(sus4) Db Db- Db aug Db dim Db(sus4)

Gb Gb- Gb aug Gb dim Gb(sus4) Cb Cb- Cb aug Cb dim Cb(sus4)

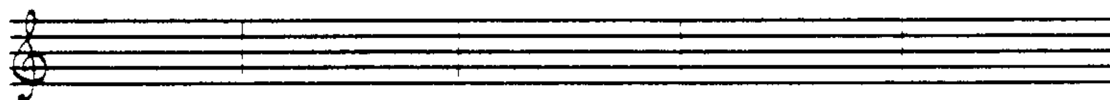
F# F#- F# aug F# dim F#(sus4) B B- B aug B dim B(sus4)

E E- E aug E dim E(sus4) A A- A aug A dim A(sus4)

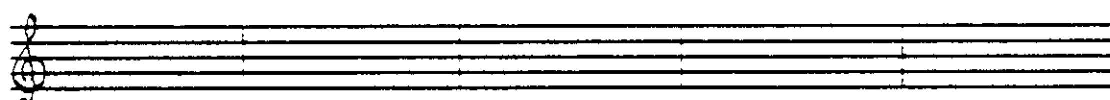
D D- D aug D dim D(sus4) G G- G aug G dim G(sus4)

16) Construct the indicated SEVENTH CHORDS in root position:

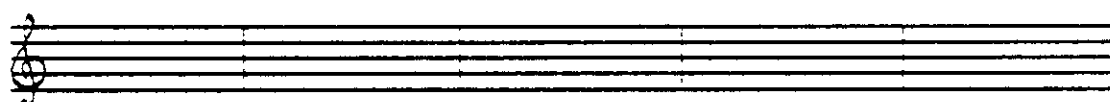
C maj7 | C-(maj7) | C6 | C-6 | C-7



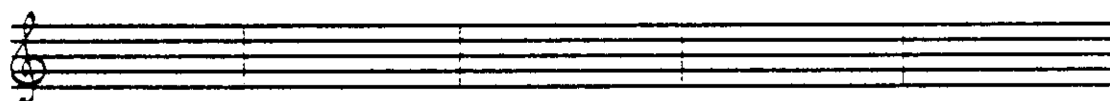
C-7(b5) | C7 | C aug7 | C7(sus4) | C dim7



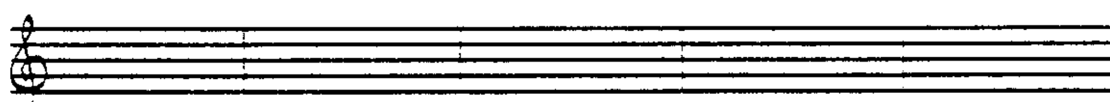
F maj7 | F-(maj7) | F6 | F-6 | F-7



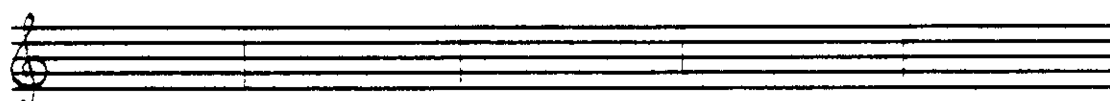
F-7(b5) | F7 | F aug7 | F7(sus4) | F dim7



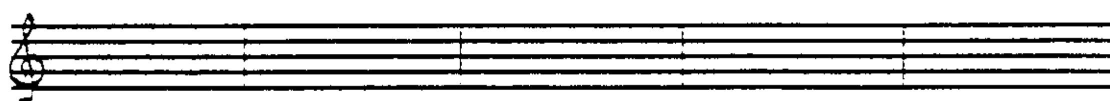
Bb maj7 | Bb-(maj7) | Bb6 | Bb-6 | Bb-7



Bb-7(b5) | Bb7 | Bb aug 7 | Bb7(sus4) | Bb dim7

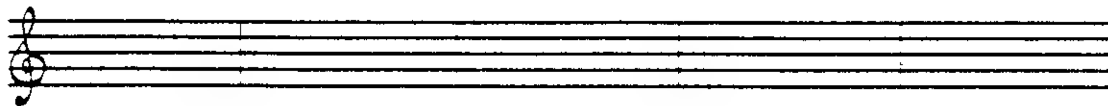


Eb maj7 | Eb-(maj7) | Eb6 | Eb-6 | Eb-7

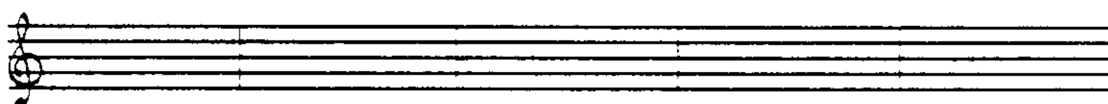


NAME________________________________ HARMONY HOMEWORK 63

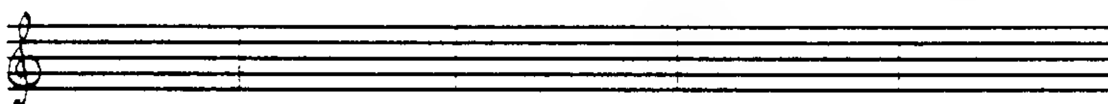
Eb-7(b5) Eb7 Eb aug 7 Eb7(sus4) Eb dim7



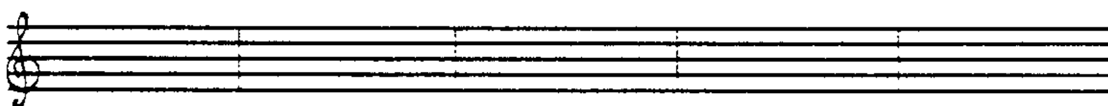
Ab maj7 Ab-(maj7) Ab6 Ab-6 Ab-7



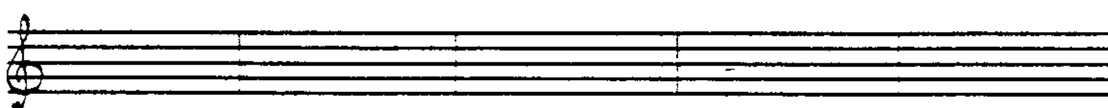
Ab-7(b5) Ab7 Ab aug7 Ab7(sus4) Ab dim7



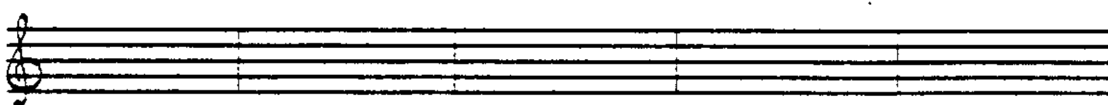
Db maj7 Db-(maj7) Db6 Db-6 Db-7



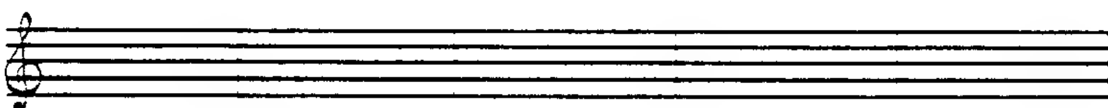
Db-7(b5) Db7 Db aug7 Db7(sus4) Db dim7



Gb maj7 Gb-(maj7) Gb6 Gb-6 Gb-7

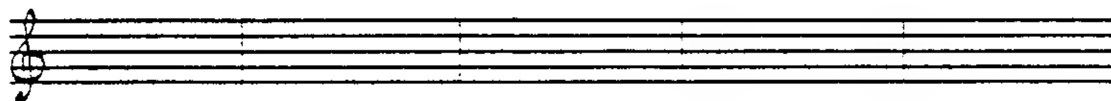


Gb-7(b5) Gb7 Gb aug7 Gb7(sus4) Gb dim7

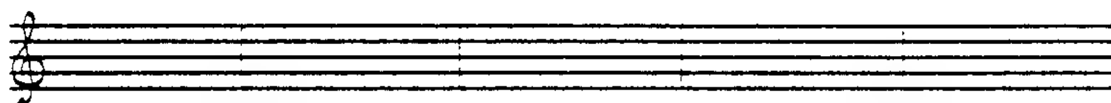


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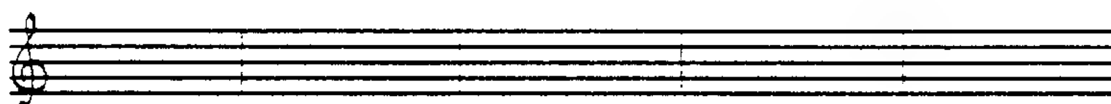
Cb maj7 Cb-(maj7) Cb6 Cb-6 Cb-7



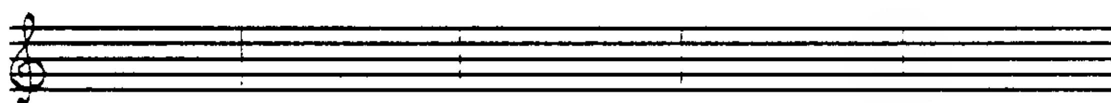
Cb-7(b5) Cb7 Cb aug7 Cb7(sus4) Cb dim7



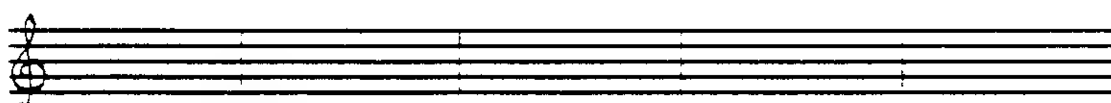
F#maj7 F#-(maj7) F#6 F#-6 F#-7



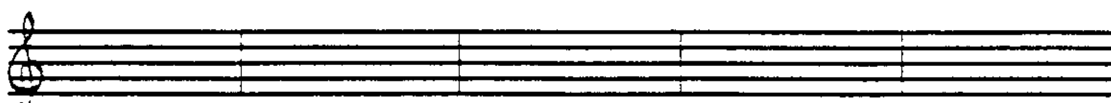
F#-7(b5) F#7 F# aug7 F#7(sus4) F# dim7



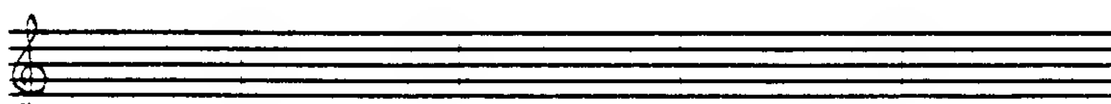
B maj7 B-(maj7) B6 B-6 B-7



B-7(b5) B7 B aug7 B7(sus4) B dim7

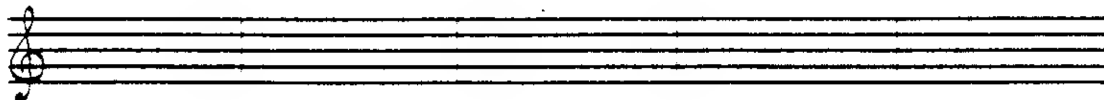


E maj7 E-(maj7) E6 E-6 E-7

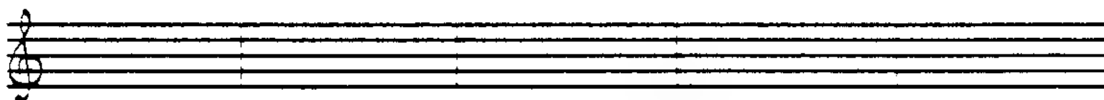


NAME________________________________ HARMONY HOMEWORK [illegible]

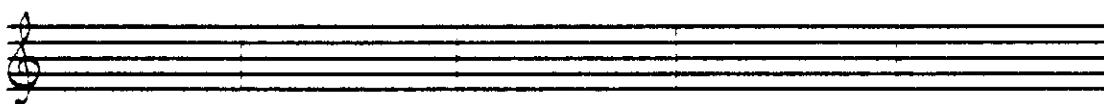
E-7(b5) E7 E aug7 E7(sus4) E dim7



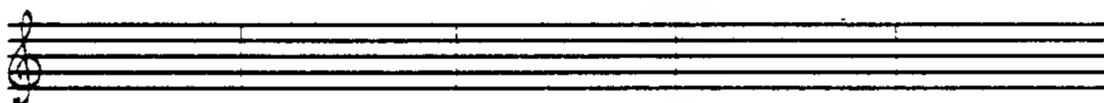
A maj7 A-(maj7) A6 A-6 A-7



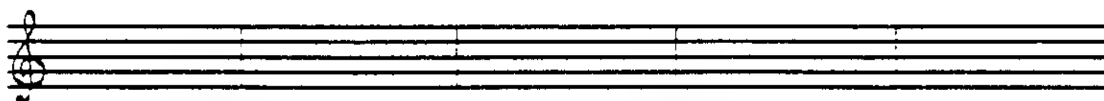
A-7(b5) A7 A aug7 A7(sus4) A dim7



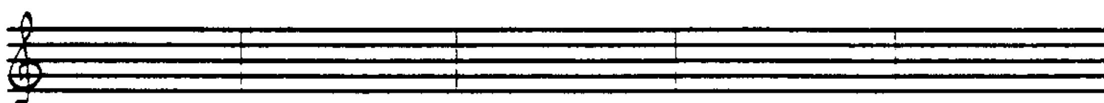
D maj7 D-(maj7) D6 D-6 D-7



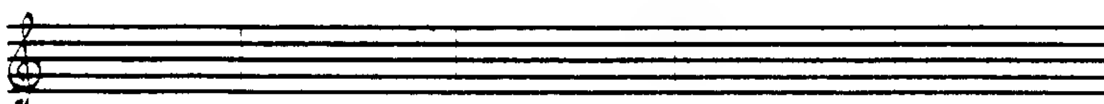
D-7(b5) D7 D aug7 D7(sus4) D dim7



G maj7 G-(maj7) G6 G-6 G-7



G-7(b5) G7 G aug7 G7(sus4) G dim7



NAME__________________________________

17) Realize chord symbols for the following triadic chord structures.







18) Complete this triadic chord progression by adding the remaining chord tones beneath the melody pitches. Then indicate, beneath the chord, the inversion using the following:

R = Root position, **1** = 1st inversion; **2** = 2nd inversion

19) Realize chord symbols for the piano harmonizations below. All chords have their roots in the bass clef:









NAME____________________________________

20) Complete this harmonization of the cycle of fifths by placing the remaining chord tones beneath the melody pitches. Then indicate the inversion for each chord.

R = Root position; **1** = 1st inversion; **2** = 2nd inversion; **3** = 3rd inversion

D-7 G7 C maj7 Bb6 C7(sus4) F6

R 2 R

C-7 F7 Bb maj7 F-7 Bb7 Eb maj7

Db6 Eb7 Ab maj7 Gb6 Ab7(sus4) Db6

Ab-7 Db7 Gb maj7 C♯-7 F♯7 B6

F♯-7(b5) B aug7 E-(maj7) B-7(b5) E aug7 A-6

E-7(b5) A aug7 D-(maj7) A-7(b5) D aug7 G maj7

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21) All the melody pitches below are available tensions. Indicate the tension number for each note:

C maj7 G maj7 C-7 F7 Bb maj7 Eb maj7

9

A-7 D7 B-7 F7 E7 A-7 D7 G maj7

Gb maj7 F maj7 Ab maj7 G maj7

C#-7(b5) C-(maj7) B-7 Bb7 E aug7 A-7 F7 Bb6

NAME______________________________

22) Realize chord symbols for this piano part. Place in parenthesis the tensions being used. All chords are in root position.

